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# Titanium Ingot, Mill Products, and Castings

JANUARY 1981

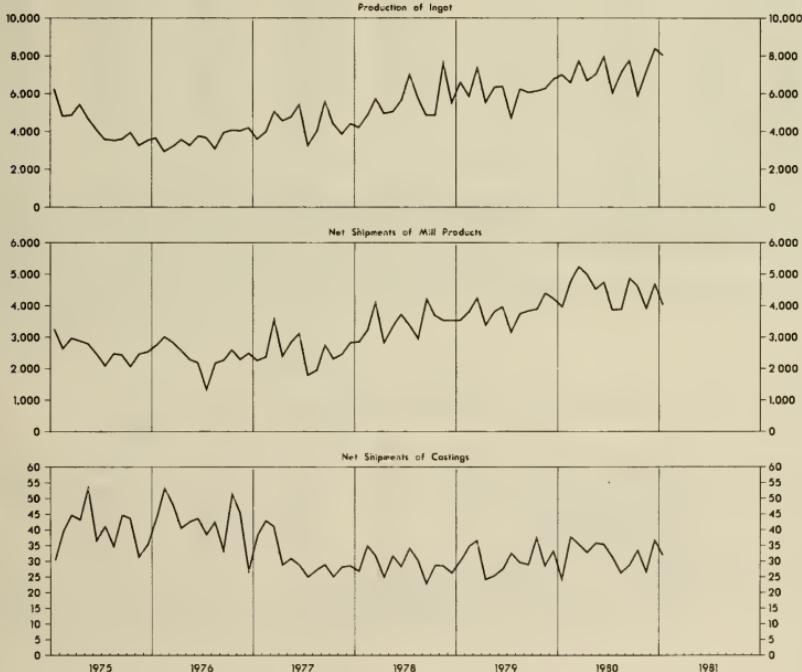
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The total production of titanium ingot for January was 8.0 million pounds. This represented a 4.5 percent decrease in production from 8.4 million pounds produced in December. Consumption of titanium ingot increased 13 percent from 7.6 million pounds in December to 8.6 million pounds in January. Net

shipments of mill products decreased 14 percent from 4.7 million pounds in December to 4.0 million pounds in January. Castings shipments increased 16 percent from 32.0 thousand pounds in December to 37.0 thousand pounds in January.

**THIS REPORT INCLUDES DATA COMPARING DOMESTIC OUTPUT, EXPORTS, AND IMPORTS**

TITANIUM INGOT AND MILL PRODUCTS BY MONTH: 1975 TO 1981  
(In Thousands of Pounds)



Address inquiries concerning these figures to the U.S. Department of Commerce, Bureau of Industrial Economics, Materials Division, Washington, D.C. 20230, or to the Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Stephen A. Kasper, (301) 763-7476.

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Table 1. TITANIUM INGOT, MILL PRODUCTS, AND CASTINGS: 1978 TO 1981

Month and year	Ingot			Mill products net shipments <sup>1</sup>	Castings shipments
	Production	Consumption	Ending stocks		
1981					
January.....	8,047	8,583	3,782	4,034	37.0
1980					
Total.....	85,928	86,921	52,307	54,274	382.4
December.....	8,426	7,568	3,719	4,710	32.0
November.....	7,228	7,482	3,203	3,948	27.0
October.....	5,976	8,015	3,343	4,621	33.7
September.....	7,806	8,341	4,945	4,889	28.9
August.....	7,132	5,832	5,850	3,895	26.5
July.....	6,103	6,368	4,942	3,881	31.5
June.....	8,029	7,835	4,705	4,760	35.5
May.....	7,057	6,573	4,706	4,544	35.9
April.....	6,727	6,891	4,038	5,006	33.0
March.....	7,794	7,950	4,144	5,256	35.6
February.....	6,621	6,790	4,356	4,777	38.1
January.....	7,029	7,276	4,356	3,987	24.7
1979					
Total.....	74,828	75,735	(X)	46,226	371.7
December.....	6,799	6,186	4,731	4,242	33.6
November.....	6,208	6,722	3,289	4,419	28.9
October.....	6,168	6,688	4,203	3,899	37.9
September.....	6,094	6,880	5,010	3,862	29.1
August.....	6,279	6,052	5,469	3,759	29.8
July.....	4,804	4,939	5,013	3,195	32.8
June.....	6,416	6,213	4,808	3,979	27.7
May.....	6,366	6,126	4,763	3,828	25.5
April.....	5,595	5,826	4,421	3,414	24.4
March.....	7,441	7,073	4,615	4,271	36.8
February.....	5,912	5,991	4,395	3,821	34.9
January.....	6,646	7,021	4,634	3,557	30.3
1978					
Total.....	66,655	67,991	(X)	41,619	352.2
December.....	5,591	6,329	5,138	3,541	26.5

<sup>1</sup>Revised by 5 percent or more from previously published figures. (X) Not applicable.<sup>1</sup>See table 2 for more detailed data.

Table 2. NET SHIPMENTS OF TITANIUM MILL PRODUCTS

(Thousands of pounds)

Product	January 1981	December 1980	January 1980
Total.....	4,034	4,710	3,800
Sheet and strip.....	( <sup>1</sup> )	1,019	1,011
Plate.....	( <sup>1</sup> )	1,618	2,256
Forging and extrusion billet.....	1,618	2,256	1,590
Rod and bar.....	840	2,988	659
Fastener stock and wire.....	167	170	186
Extrusion (other than tubing).....	( <sup>1</sup> )	1,409	278
Pipe and tubing.....	( <sup>1</sup> )	1,409	354
Other.....	( <sup>1</sup> )	1,409	354

<sup>1</sup>Revised by 5 percent or more from previously published figures.<sup>1</sup>Sheet and strip, plate, extrusion (other than tubing), pipe and tubing, and other have been combined to avoid disclosing individual company information.

Table 3. NET SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF TITANIUM MILL PRODUCTS: 1978 TO 1981

(Quantity in thousands of pounds; value in thousands of dollars)

Month and year	Manufacturers' net shipments <sup>1</sup> (quantity)	Exports of domestic merchandise <sup>1, 2</sup>			Percent exports to manufacturers' net shipments (quantity)	Imports for consumption <sup>4</sup>		Calculated import duty (value)	Apparent consumption <sup>5</sup> (quantity)	Percent imports to apparent consumption (quantity)
		Quantity	Value at port	Estimated producers' value <sup>3</sup>		Quantity	Value <sup>5</sup>			
<b>1981</b>										
January.....	4,034	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
<b>1980</b>										
December.....	4,710	317	5,371	5,119	7	223	1,574	279	4,616	5
November.....	3,948	295	5,050	4,813	7	143	1,149	201	3,796	3
October.....	4,621	629	6,149	5,903	14	160	1,123	195	4,152	4
September.....	4,889	441	4,538	4,325	9	154	1,313	231	4,602	3
August.....	3,895	243	4,422	4,214	6	292	3,229	583	3,944	7
July.....	3,881	429	4,872	4,643	11	119	1,226	208	3,571	3
June.....	4,760	202	3,274	3,120	4	127	999	177	4,485	3
May.....	4,544	233	3,970	3,783	5	114	842	146	4,425	3
April.....	5,006	188	3,118	2,971	4	119	1,085	192	4,937	2
March.....	5,256	226	3,448	3,286	4	163	823	207	5,193	3
February.....	4,777	280	3,843	3,662	6	133	868	137	4,630	3
January.....	3,987	206	2,769	2,639	5	145	971	172	3,926	4
<b>1979</b>										
December.....	4,242	416	3,773	3,596	10	149	861	154	3,975	4
November.....	4,419	414	3,308	3,153	9	255	1,538	258	4,260	6
October.....	3,899	518	4,201	4,004	13	147	754	133	3,528	4
September.....	3,842	135	1,598	1,523	4	111	687	114	3,818	3
August.....	3,759	165	1,829	1,743	4	153	701	104	3,747	4
July.....	3,195	145	2,092	1,994	5	80	799	127	3,130	3
June.....	3,979	222	2,269	2,162	6	102	673	119	3,859	3
May.....	3,828	281	2,693	2,566	7	210	1,087	185	3,757	6
April.....	3,414	65	873	831	2	229	1,048	186	3,578	6
March.....	4,271	155	1,851	1,763	4	234	1,187	208	4,350	5
February.....	3,821	66	817	778	2	90	375	62	3,845	2
January.....	3,557	49	605	576	1	124	656	102	3,632	3
<b>1978</b>										
December.....	3,541	94	817	778	2	125	526	94	3,572	4

(NA) Not available.

<sup>1</sup>See table 4 for comparison of Standard Industrial Classification (SIC) codes, export (Schedule B) codes, and import (TSUSA) codes.<sup>2</sup>Source: Bureau of the Census Report FT-410, U.S. Exports—Schedule E—Commodity by Country.<sup>3</sup>These values were derived by use of adjustment factors to exclude freight, insurance, and other charges incurred in moving goods to the port of export. This adjustment is made to convert the values to an approximation of the producers' value of exported goods. Current adjustment factors are based on data for 1976 which are published in *Origin of Exports of Manufacturing Establishments*, M76(AS)-8, appendix A. The adjustment factor for this report is .953.<sup>4</sup>Source: Bureau of the Census Report IM 145-X, U.S. Imports for Consumption and General Imports.<sup>5</sup>Beginning with 1978, the dollar value represents the c.i.f., (cost, insurance, and freight) value at the first port of entry in the United States plus U.S. import duties.<sup>6</sup>Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.

Table 4. COMPARISON OF STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES, EXPORT (SCHEDULE B) CODES, AND IMPORT (TSUSA) CODES

1981 SIC product code	SIC code description	1981 export code (Schedule B)	SIC code description	1981 import code (TSUSA)	Import code description
33562 74	Forging and extrusion billet.....				
33562 79	Other (sheet, plate, tubing, bar, etc.).....	630.6570	Wrought titanium metal including alloys (excluding sponge, ingots, billets, blooms, sheet, bars, slabs, waste, and scrap)	620.2000	Wrought titanium metal, including alloys (excluding waste and scrap and unwrought metal)

## DESCRIPTION OF SURVEY

**Scope of Survey**—This survey covers firms engaged in manufacturing titanium ingot and mill products, including castings.

**Sampling Description**—The statistics in this publication were collected on the Bureau of Industrial Economics Form ITA-991, Titanium Metal. The mailing panel for this survey includes all known titanium ingot, mill product, and castings producers.

**Survey Error**—Figures for the current month include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are "imputed" from month-to-month movements shown by reporting firms and are generally limited to a maximum of 10 percent for any one item. Individual items with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

**Revision to Previous Period Data**—Statistics for previous months may be revised due to receipt of corrected data from respondents, including late reports for which imputations were previously made as described above, and other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

**Seasonal Adjustment**—The data are not adjusted for seasonal variation or number of working days.

## EXPLANATION OF TERMS

**Net Shipments**—Derived by subtracting the sum of producers' receipts of each mill shape from the industry's gross shipments of that shape.

**Gross Shipments**—Include the quantities of mill shapes consumed in rolling mills in the production of fabricated products such as forgings, etc. Also include the quantities of mill shapes shipped between producers.

## COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently and are based on somewhat differing systems of classification. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classifi-

cation is based on type of industry; whereas, the export and import classification system is more materials oriented. Aside from the differences in the basic commodity classifications, there are additional problems involving import data, since there are a substantial number of imported commodities which are not produced in the United States or which are produced only in very small quantities and which, therefore, have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to those mentioned above, there are also the following problems affecting the comparability of the three sets of data.

**Valuation**—There are different methods of valuation for the three types of data:

**Domestic Output**—Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.

**Exports**—Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance, and other charges to the export point.

Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.

**Imports**—Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

**Duplication in Quantity and Value of Output**—Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

**Low-Valued Export and Import Transactions**—Commodity information is not shown for individual imports valued under \$251. For exports, commodity information is not reported for shipments individually valued under \$501 effective March 1979 and for shipments valued under \$251 prior to March 1979. This is believed to have only negligible effect on the statistics for most commodities.

**Manufacturers' Shipments, Not Specified by Kind**—The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

**Time Lag Between Output and Exports**—There will be a lag between the time a commodity is produced or shipped by the

producer and the time it is actually exported, especially when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

**"Direct" vs "Total" Commodity Exports and Imports—** Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

**Used Commodities—**With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

**Geographic Area of Coverage—**Import and export data reflect the movement of merchandise into and out of the U.S. customs territory (the 50 States, the District of Columbia, and Puerto Rico). They do not include movements between the United States and its possessions. Domestic output (shipments) data exclude Puerto Rico and other outlying areas.

#### RELATED REPORTS

An annual Current Industrial Report is published in this series. The annual report summarizes monthly figures and incorporates all known revisions in the series for both current and previous year, thus providing a single reference copy to replace the monthly publications. This annual summary provides additional information on the history of this survey.

The Bureau of the Census also publishes reports on related products as follows:

Series	Frequency	Title
<i>Current Industrial Reports</i>		
M3-1	Monthly	<i>Manufacturers' Shipments, Inventories, and Orders</i>
M33-2	Monthly	<i>Aluminum Ingot and Mill Products</i>
MA-33G	Annually	<i>Magnesium Mill Products</i>
MA-33B	Annually	<i>Steel Mill Products</i>
M33A	Monthly	<i>Iron and Steel Castings</i>
M33E	Monthly	<i>Nonferrous Castings</i>
<i>Foreign Trade Reports</i>		
FT-410	Monthly	<i>U.S. Exports—Schedule E—Commodity by Country</i>
IM 145-X	Monthly	<i>U.S. Imports for Consumption and General Imports</i>

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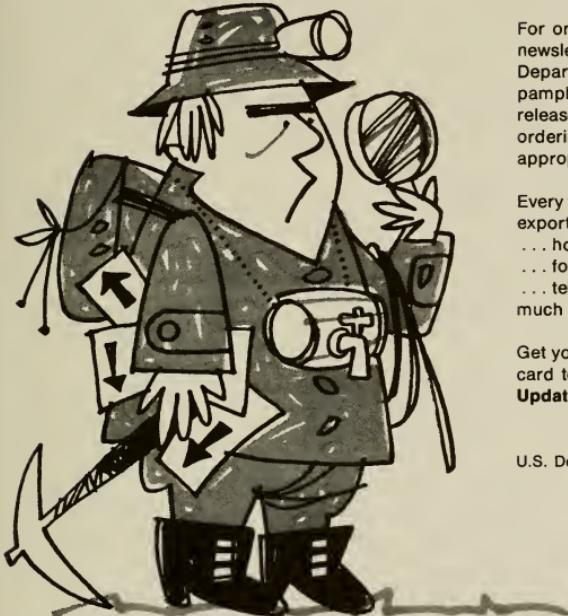
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